

CLAIMS

1. A device which comprises a circuit arrangement and an electrically conductive plate having an inductive function, which inductive function corresponds to a structure of slits formed in the plate.
2. A device as claimed in claim 1, characterized in that the structure of slits is formed by one or more spiral-shaped slits.
3. A device as claimed in claim 2, characterized in that the spiral-shaped slits are provided with a respective contact point in their central region and/or that at least one further contact point is arranged adjacent the spiral-shaped slits and/or between the central region and the periphery of a spiral-shaped slit.
4. A device as claimed in claim 3, characterized in that there is provided a printed circuit board which supports the circuit arrangement and is electrically coupled to the electrically conductive plate by way of the contact points.
5. A device as claimed in claim 4, characterized in that the printed circuit board supports the electrically conductive plate.
6. A device as claimed in one of the claims 1 to 5, characterized in that the electrically conductive plate has the function of a plurality of coils, the number of which corresponds to the number of spiral-shaped slits.
7. A device as claimed in one of the claims 1 to 6, characterized in that the electrically conductive plate is formed as a sheet of metal.
8. A device as claimed in claim 7, characterized in that an insulating layer is provided between the printed circuit board and the electrically conductive plate.

9. A device as claimed in one of the claims 1 to 8, characterized in that a layer of a magnetic material, notably a ferrite material, is provided on at least one side of the electrically conductive plate.

10. A device as claimed in claim 9, characterized in that there is provided an arrangement which comprises two layers of a magnetic material wherebetween the electrically conductive plate is arranged, on one outer side of the arrangement there being provided a printed circuit board which is electrically coupled to the electrically conductive plate.

11. A device as claimed in one of the claims 4 to 10, characterized in that there is provided a cooling layer which consists of a suitably thermally conductive material, notably metal, and that components of the device which are to be cooled are arranged between the cooling layer and the printed circuit board.

12. A device as claimed in one of the claims 4 to 10, characterized in that either the electrically conductive plate or the layer of a magnetic material is used for cooling.

13. A power supply device which includes a device as claimed in one of the claims 1 to 12.

14. A power supply device as claimed in claim 13, characterized in that the electrically conductive plate serves to form inductances of a multi-phase converter.

15. An electrically conductive plate having an inductive function, the inductive function corresponding to a structure of slits formed in the plate.

16. An electrically conductive plate as claimed in claim 15, characterized in that the structure of slits is formed by spiral-shaped slits.